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NAVAL WAR COLLEGE
NEWPORT, R.I.

**CRACKING THE RICE BOWLS:
EXPANDING JOINT SERVICE SUPPORT FOR ROTARY WING AVIATION MAINTENANCE**

by

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A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

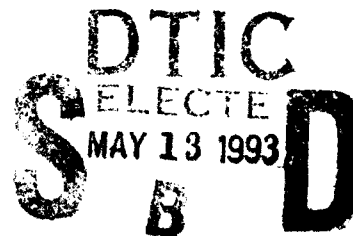
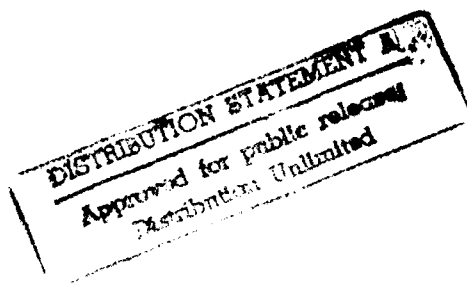
Signature

18 June 1993

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LTC J. Dan Keirse
Faculty Research Advisor



93-10354



93 5 1 1 1 2 0

35 P8

SEC - 1 - UNCLASSIFIED - PAGE

REPORT DOCUMENTATION PAGE				Form Approved OMB No 0714-0185	
1a. REPORT SECURITY CLASSIFICATION			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION/AVAILABILITY OF REPORT		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			DISTRIBUTION STATEMENT A; APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.		
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S)		
6a. NAME OF PERFORMING ORGANIZATION OPERATIONS DEPARTMENT		6b. OFFICE SYMBOL (if applicable)		7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) NAVAL WAR COLLEGE NEWPORT, R.I. 02841		6d. ADDRESS (City, State, and ZIP Code)		7b. ADDRESS (City, State, and ZIP Code)	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION OPERATIONS DEPARTMENT		8b. OFFICE SYMBOL (if assigned) C		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c. ADDRESS (City, State, and ZIP Code) NAVAL WAR COLLEGE NEWPORT, R.I. 02841		10. SOURCE OF FUNDING NUMBERS		11. WORK UNIT ACCESSION NO.	
PROGRAM ELEMENT NO.		PROJECT NO.		TASK NO.	
11. TITLE (Include Security Classification) CRACKING THE RICE BOWLS: EXPANDING JOINT SERVICE SUPPORT FOR ROTARY WING AVIATION MAINTENANCE (II)					
12. PERSONAL AUTHOR(S) MAJOR JAMES P. MCGAUGHEY UNITED STATES ARMY					
13a. TYPE OF REPORT FINAL		13b. TIME COVERED FROM: TO:		14. DATE OF REPORT (Year, Month, Day) 93 JUN 18	
15. PAGE COUNT 34					
16. SUPPLEMENTARY NOTES: A PAPER SUBMITTED TO THE FACULTY OF THE NAVAL WAR COLLEGE IN PARTIAL SATISFACTION OF THE REQUIREMENTS OF DEPARTMENTS OF OPERATIONS. THE CONTENTS OF THIS PAPER REFLECT MY OWN PERSONAL VIEWS AND ARE NOT NECESSARILY ENDORSED BY THE NAVAL WAR COLLEGE OR DEPARTMENT OF THE NAVY.					
17. COSAT CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUBGROUP	Cracking The Rice Bowls Expanding Joint Service Support for Aviation Maintenance		
19. ABSTRACT (Continue on reverse if necessary and identify by block number)					
<p>The essay includes a discussion of the current regulatory responsibilities and Service specific doctrinal requirements governing the employment of rotary wing maintenance. The historical examples of OPERATIONS JUST CAUSE, DESERT SHIELD, STORM, AND PROVIDE COMFORT are reviewed to highlight theater maintenance procedures in different situations and the costs associated with the Services taking care of their own. It concludes that the CINC must execute his authority to establish centralized management of theater rotary wing maintenance requirements. A recommendation is also made for the CINC to designate a "predominate Service", fixing responsibility for providing the base structure for theater maintenance. It is understood that an evolution towards joint maintenance during crisis situations will require changes in training and adjustments to Service doctrine. However, by creating an atmosphere in which task organizing maintenance is as readily accepted as task organizing combat forces the CINC will expand his operational capabilities.</p>					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> OTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED		
22a. NAME OF RESPONSIBLE INDIVIDUAL CHAIRMAN OPERATIONS DEPARTMENT			22b. TELEPHONE (Include Area Code) 841-3414		22c. OFFICE SYMBOL C

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Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
Distribution/	
Availability Codes	
Dist. Special	
A-1	

ABSTRACT

CRACKING THE RICE BOWLS: EXPANDING JOINT SERVICE SUPPORT FOR ROTARY WING AVIATION MAINTENANCE

The ability of the Commander in Chief to adapt his planning efforts and provide an appropriate military response to future crises will become more and more constrained as reductions in force structure and budgets are implemented. The reductions will mandate a change in the way rotary wing aircraft are maintained during joint operations. Today the Commander in Chief and the Joint Task Force Commander rely almost exclusively upon each Service to maintain their respective aircraft while supporting joint "non-traditional" missions and operations other than war. The continued reliance on each Service to task organize and sustain separate maintenance support operations for their aircraft has become uneconomical and impacts operational flexibility.

The essay includes a discussion of the current regulatory responsibilities and Service specific doctrinal requirements governing the employment of rotary wing maintenance. The historical examples of OPERATIONS JUST CAUSE, DESERT SHIELD / DESERT STORM and PROVIDE COMFORT are reviewed to highlight theater maintenance procedures in different situations and the costs associated with Services "taking care of their own". It concludes that the CINC must execute his authority to establish centralized management of theater rotary wing maintenance requirements. A recommendation is also made for the CINC to designate a "predominate Service", fixing responsibility for providing the base structure for theater maintenance. It is understood that an evolution towards joint maintenance during crisis situations will require changes in training and adjustments to Service doctrine. However, by creating an atmosphere in which task organizing maintenance is as readily accepted as task organizing combat forces the CINC will expand his operational capabilities.

CHAPTER I

INTRODUCTION

Rotary wing (R/W) aviation provides the Commander in Chief (CINC) with the flexibility and versatility to respond to a myriad of situations throughout the spectrum of conflict. Whether that involvement means providing aerial resupply for humanitarian relief operations or conducting deep strike operations, the helicopter is valued as a force multiplier.

In late 1987 the Commander in Chief (CINC) of the United States Central Command (CENTCOM) asked for the Army to provide an aviation unit that could operate from U.S. Navy vessels, combat small boat attacks, and hamper enemy mining operations of merchant shipping traffic in the Persian Gulf. The Army's response was to create Task Force (TF) 118 which deployed to the Persian Gulf in February 1988. TF 118 flew specially outfitted OH-58D (Armed) helicopters and conducted a myriad of joint Army/Navy missions in support of OPERATIONS PRIME CHANCE and EARNEST WILL. Developing tactics and adapting procedures as they encountered different situations TF 118 operated from 35 different frigates and destroyers while inserting Navy SEAL teams, directing Naval gunfire and, supporting additional Special Forces and Naval operations. Despite the integration of tactical operations the Navy offered little more assistance than providing space for the aircraft and crew. For the duration of the operation the Army aircraft were maintained by Army and contractor maintenance personnel located on Naval vessels and aboard a barge maintenance facility in Bahrain.¹

TF 118 highlights Service efforts to merge tactical employment principles for R/W aviation, nevertheless, truly joint operations will remain simply a grand vision until a similar merging occurs with respect to R/W maintenance. The continued reliance on each Service to task organize, assemble, deploy and sustain separate aviation maintenance operations for their particular service aircraft constrains the selective employment by the CINC of multi-service R/W assets. This traditional approach to R/W maintenance support does not provide the flexibility required for employing and sustaining R/W assets within the adaptive planning process at the operational level of war.

Joint maintenance does not infer a need to change Service doctrine, force structure or to realign the roles and missions of the Services, although they certainly will be impacted. It is simply acknowledging that within the changing geo-political environment and declining force structure the CINCs can increase their operational capabilities if they make better use of the combat and combat support potential of available forces. To accomplish the mission, the CINCs have unconsciously (or consciously) limited the joint employment of R/W aviation because of the support "baggage" that is perceived to be unique within each Service support structure.

In order to fully explore the concept of joint maintenance for R/W aviation the regulatory responsibilities and Service specific doctrinal requirements must be reviewed. To illustrate the Service similarities and differences in maintenance support for R/W aircraft, the historical examples of OPERATIONS JUST CAUSE, DESERT SHIELD / DESERT STORM, and PROVIDE COMFORT will be reviewed. Finally, the benefits of integrated maintenance support will be analyzed with respect to the six principles of logistics to assess the feasibility, acceptability and sustainability of joint support for R/W aviation maintenance. The analysis and discussion will reflect the experiences of 14 years within Army Aviation Maintenance, including commands of intermediate maintenance companies at the Division and Corps levels during peacetime and wartime.

CHAPTER II

OVERVIEW OF MAINTENANCE CAPABILITIES

SERVICES.

Aviation maintenance occurs at basically three levels throughout the Services. Those levels are, squadron or unit maintenance, intermediate maintenance, and depot maintenance. (The lone exception is the Air Force which employs a two level system; unit and depot.) All Services routinely deploy with unit and intermediate capabilities for their peculiar aircraft. The repair capability at the unit level is normally limited to minor troubleshooting, removal and replacement of parts and components, and daily servicing. Intermediate maintenance provides backup support for the unit level maintenance as well as an expanded capability to perform diagnostic troubleshooting, teardown analysis and repair, and limited rebuilding of components, to include engines. During crisis situations the augmentation of personnel, tools and test equipment from the theater level also provides the intermediate maintenance unit with some limited depot level repair and rebuild responsibility. Doctrinally, repairs of aircraft and components completed by intermediate maintenance are usually returned to the owner.

Depot maintenance is normally accomplished only at centralized, fixed facilities (usually within CONUS) and possesses an even greater teardown, analysis and rebuild capability. The components and aircraft that are repaired by the depot facility feed the Service supply system and are not returned directly to the previous owner. Thus the inclusion of some depot capability within any theater aviation maintenance program is critical to assuring the operational readiness of the high technology aircraft present within the

force. Of concern to the CINC is that the requirement for depot maintenance is linked to a routine peacetime dependence on government civilian and contractor maintenance personnel.²

Doctrinally, the Navy and Marines "carry their own" support. Each possesses sufficient organic or dedicated sea transport to move and sustain organic R/W assets. The recent shift in the Navy's doctrinal focus to operating within the littoral environment will place their intermediate maintenance capabilities in closer proximity to contribute to the overall theater support. The Marines have always been oriented towards expeditionary amphibious warfare. The Marine Air Ground Task Force (MAGTF), provides the CINC with an intermediate maintenance capability afloat, aboard logistic support ships, and ashore with the Force Service Support Groups.³ Both the Navy and Marines operate separate and distinct R/W maintenance, evacuation and supply operations facilitated by organic air or sea lines of communication (LOCs).⁴

In contrast to the Navy and Marines, both the Army and Air Force prefer to establish their theater level aviation maintenance operations at airfields. Doctrinally, within the Army, intermediate maintenance companies may deploy in whole or in part to support Army aircraft assigned to a joint task force (JTF). Of concern to the CINCs planners is the fact that it takes a significant amount of airlift and sealift to deploy the entire intermediate maintenance company. The USAF deploys a composite maintenance team capable of removing and either replacing or evacuating the component. Only minor maintenance is performed away from the home station. Once established within the theater the maintenance operations of both the Army and the Air Force (to a lesser extent) are dependent upon common user airlift and sealift for sustainment. (NOTE: In the past the Army did experiment with an afloat

capability, called the Arapaho. The Arapaho would have given the Army a portable, modular intermediate maintenance capability that could be fitted onto a variety of commercial shipping vessels. Despite it's viability, the Arapaho project was canceled due to funding constraints.⁵)

CONTRACTOR/FACTORY SERVICE REPRESENTATIVES (CFSR).

Services routinely contract portions of their peacetime R/W maintenance support to compensate for force structure deficiencies. That relationship virtually mandates incorporating contractor personnel into any theater maintenance support plan. The increasing complexity of R/W aircraft has created a dependence on the CFSR to establish special repair activities (SRAs) located within the theater to provide quick repair of the high tech avionic and armament components. In addition to the SRAs the CFSR also bring with them a vast amount of technical knowledge that expands intermediate and depot level troubleshooting capabilities. Just as important, the CFSRs provide a personal link with the factory that can expedite repair and return of critical parts. The exclusion of the specialized services and repair capabilities provided through the CFSRs may create an unacceptable risk to combat readiness.

A review of the theater R/W maintenance capabilities highlights a significant duplication of Service intermediate and depot maintenance capabilities ranging from technical skills, supply lines, evacuation operations, repair parts inventories to tools and test equipment. By itself duplication within a theater is not bad but the CINC must make the choice between what is efficient and what is operationally effective. The following chapter will summarize the responsibilities that the CINC, the Joint Task Force Commander (JTFC), and the separate Service Chiefs have in providing the most effective R/W aviation maintenance operation to support any given mission.

CHAPTER III

RESPONSIBILITIES

The passage of the Goldwaters-Nichols Act (GNA) in 1986 shifted a great deal of the responsibility and authority to the CINC that had previously been welded by the respective Service Chiefs.⁶ After GNA, the apportionment of combat, combat support and combat service support forces and the theater structure for the sustainment of those forces was based on the CINCs regional strategy. To facilitate the doctrinal evolution towards conducting integrated operations the Joint Chiefs of Staff (JCS) began developing joint publications, articulating responsibilities and doctrine. Joint Pub (Test) 4-0, Doctrine for Logistic Support of Joint Operations, is a keystone document providing guidelines concerning command relationships, responsibilities, and procedures for the supported CINC and the supporting commanders to operate in a joint environment.⁷

CINC.

According to Joint Pub 4-0, "Under conditions short of crisis or war, CINCs are authorized to exercise directive authority over logistics operations within their areas of responsibility (AOR). This authority is designed to ensure effective execution, provide efficiency and economy in operations, and prevent or eliminate unnecessary duplication of facilities and overlapping functions of component commands."⁸ By itself the authority given to the CINC appears to transcend past parochialism that was endemic in joint operations by encouraging the assignment of responsibilities and missions on a functional basis rather than a Service basis. However, the same paragraph provides the following caveat: "The CINCs directive authority over logistics operations

does not release the Services from their responsibility to man, equip, train, and sustain their Service component."⁹ The authority outlined within JCS Pub 4-0 also allows the CINC to, "... use all necessary facilities and logistic resources to include the transfer of logistics functions between or among the Service components within the AOR to accomplish the mission under wartime or crisis conditions."¹⁰ Given these general guidelines the responsibility for coordinating maintenance efforts and encouraging the use of joint maintenance rests squarely on the shoulders of the CINC.

JOINT TASK FORCE COMMANDER, (CJTF).

The CJTF is responsible for: "... ensuring that cross-service and common service support is provided and the force operates as a mutually supporting team." " Unlike the CINC, the CJTF does not have directive authority. The JTF, "... is established with a specific limited objective in mind and it was felt that he did not require centralized control of logistics."¹² This is an apparent fallacy with the new joint doctrine. Centralized management is necessary for controlling and coordinating joint efforts and it will become even more important in the future as the CINC and CJTF struggle to achieve the same operational capability with less resources.

SERVICES.

Joint Pub 4-0 also outlines Service responsibilities for supporting the CINCs. The principle point is that the Services have the responsibility to man, equip, train, and sustain their forces.¹³ With the CINCs approval the Services may sustain their forces through four different methods; cross service support, common service support, joint service support, and single service

support. They are briefly defined as;

a. Cross servicing - an operation where one Service supports another Service's equipment on a reimbursable basis.

b. Common servicing - an operation where one Service provides support to another on a non-reimbursable basis.

c. Joint servicing - an operation in which a jointly staffed and funded organization is supporting two or more of the services.

d. Single servicing - each Service provided it's own support.¹⁴

Of the four methods of support, only joint servicing or a combination of cross/common servicing reflect the realities of conducting rotary wing maintenance as part of future crisis. (NOTE: This combination of servicing will be referred to as joint/integrated support.) The constraints of today's restricted budgets and limited force availability will impact greatly on the CINCs ability to maintain readiness. The Services will have to evolve from single-servicing to truly integrated service support for R/W aviation if the CINC is to be able to accommodate the flexibility required for adaptive planning. The following summary highlights historic examples to illustrate the Services' traditional dependence on single-service support and provide insight into the complexity of the process of supporting R/W aviation.

CHAPTER IV

HISTORICAL REVIEW OF THEATER AVIATION MAINTENANCE SUPPORT.

As the CINC assumes more and more of the authority provided to him through regulations, doctrine, and policy it becomes increasingly apparent that his operational reach or tactical influence can be extended by better management of the logistics assets allocated to him. The planning and execution of R/W aviation maintenance support for recent operations highlight the similarities and differences of each Service's approach towards sustaining combat readiness.

OPERATION JUST CAUSE.

The planning for OPERATION JUST CAUSE is generally viewed as the first major test of the authority of the regional CINC as a combatant commander (COCOM) since the passing of the Goldwaters-Nichols Act. U.S. Army General Thurman was CINC, Southern Command (SOUTHCOM). He wanted the operation to maximize combat flexibility of the array of forces assigned and allocated to him. An extensive infrastructure including airfields, ports, and secure training areas allowed a gradual covert emplacement of combat forces. The development of the campaign plan depended upon a synchronization of the capabilities of rotary wing (R/W) assets from several CONUS based Army units and Special Operation Aviation (SOA) units. Intra-theater R/W support was limited to an organic intermediate maintenance company and a large civilian contractor augmentation. Operational security requirements did not allow for prepositioning additional intermediate level support. The CINC did not view it as a problem assuming that units selected for deployment would include sufficient intermediate maintenance resources to handle minor repair. The

assumption was that arriving units could rely on the SOUTHCOM for backup support. Planning also assumed that the SOUTHCOM intermediate maintenance company would be capable of conducting 24 hour operations on an extended basis without augmentation. In actuality, the high operations tempo (OPTEMPO) and battle damage quickly overwhelmed all capability. The situation was aggravated by SOUTHCOMs heavy reliance on contractor maintenance. That reliance proved a liability when, during the first four days of the operation, less than 10 percent of the civilians reported to work.¹⁵

The R/W maintenance support plan for Operation Just Cause relied in principle on integrating arriving aircraft into the existing Army support structure with minimal augmentation. However, real world budget concerns and intra-service rivalry for parts, tools and test equipment caused units to rely on augmenting their deployed organic capabilities by maintaining support lines of communication with their home unit. The lack of integration or cooperation resulted in Army support pipelines having to be maintained to and from wherever the helicopters came from, (Ft. Ord, Ft. Bragg, Ft. Campbell). On the other hand, Air Force R/W participation was limited to SOA aircraft. To ensure readiness Air Force mechanics deployed and operated out of Army hanger facilities within Panama. USAF supply requirements were also met by maintaining a separate Air Force pipeline.¹⁶

Although there was not a plan for cross-service support Army and Air Force personnel found themselves in the same hanger performing battle damage repairs to blades, engines, fuselages and flight control surfaces of each others aircraft. Studies have attributed the unprecedented aircraft availability to the high degree of inter-service cooperation.¹⁷

OPERATION JUST CAUSE represented a limited employment of forces in support of a lesser regional conflict. The duration of the operation was designed to

be quick and R/W maintenance was planned around existing capabilities. Despite this, an enormous quantity of maintenance equipment and spare parts was moved to and from the theater with little coordination or consideration of merging requirements. In the end, aircraft were supported and combat readiness was sufficient, but was it reflective of the best we could do?

OPERATION DESERT SHIELD / OPERATION DESERT STORM.

Less than a year after OPERATION JUST CAUSE the U.S. Military found itself involved in a major regional contingency. This time it involved a CINC who by most standards didn't command many forces during peacetime. The crisis that developed within the Central Command (CENTCOM) area of responsibility (AOR) presented the CINC with an entirely different set of circumstances that would impact his ability to employ the right force. Unlike Panama, CENTCOM had very little personnel assigned and very little infrastructure to work from in Southwest Asia. To meet the immediate threat the CINC wanted to maximize the early employment of combat power considering only minimal support forces for early deployment. With respect to R/W aviation, the CINC's planners maintained the parochial adherence to a single-service oriented philosophy of support. Before combat operations commenced each Service had established separate intermediate and limited depot maintenance capabilities that were tailored to support their peculiar aircraft. In order to fully appreciate the immense scope of redundant capabilities and the recurring demands on air and sea transportation assets a summary of each Service's method of support follows.

U.S. MARINES.

The Marine R/W maintenance support during DESERT SHIELD / DESERT STORM

depended upon the organizational and limited intermediate maintenance capabilities organic within the Marine Air Wings (MAW) and the utilization of dedicated aviation logistic support ships (T-AVBs). The single-service support concept complements the Marine doctrine. As an amphibious force the Marines organization (referred to as the Marine Air Ground Task Force or MAGTF), for combat hinges upon task organizing sufficient combat power, combat support, and combat service support to meet mission requirements.¹⁸

The uniqueness of the MAGTF R/W aviation maintenance capability is that the Marines have sufficient organic and dedicated ships to deploy their equipment. The recent acquisition of the T-AVBs significantly expanded the MAGTF ability to support the rapid deployment requirements of contingency operations. With little notification or preparation the first of the two T-AVBs were activated, completed sea trials, loaded equipment and transited the Atlantic arriving in Bahrain on 17 Sept. This was almost exactly one month after the first Marine AH-1W aircraft initiated security operations within the theater. During Desert Shield the T-AVBs provided the CINC with an intermediate maintenance capability that otherwise would not have arrived within the AOR for months due to the priority combat systems and personnel had on available airlift and sealift. Highlighting one of the more impressive capabilities, the T-AVB carried an inventory of over 27,000 lines of aviation spares and repair parts. Ultimately Marine R/W aircraft were supported by two T-AVBs and a shore based intermediate maintenance unit within the Fleet Surface Support Group (FSSG). To the CINC the T-AVB represented an effective evolution of forward based maintenance for contingency operations. It is important to remember, however, that the first consideration for the employment of the T-AVB is that a secure area exists for arrival and set-up.¹⁹

AIR FORCE.

As in OPERATION JUST CAUSE, the USAF R/W participation in OPERATION DESERT SHIELD / DESERT STORM was limited to SOA aircraft and once again, USAF personnel provided a limited range of maintenance and supply support.

"At the start of the operation all units deployed with their war readiness spares kits and combat supply system computers. Each unit deployed utilized satellite communications to request support from their home stations....These highly mobile Special Operations Forces received virtually all of their support from their home stations. Resupply was provided from homestation based on daily SITREPS and transported via dedicated air for high priority air resupply. (This system later evolved into what became known as DESERT EXPRESS and was utilized by all services to expedite deliveries.) The dedicated air transport also allowed the Air Force the flexibility to evacuate components for repair on a priority basis." 20

NAVY.

The Navy was able to adapt their peacetime R/W intermediate maintenance and supply support operations to wartime conditions with little augmentation. The advantage of owning both air and sea assets enabled the Navy to maintain a single-service oriented approach to aviation maintenance. Of concern to the CINC was that despite the existence of extensive depot capability within the theater (through the Army) the Navy retained it's peacetime evacuation policy of moving assets to Naval facilities in Italy and CONUS for depot repair. The Navy and Marine maintenance programs remained separate and distinct despite their proximity and the similarities of capabilities. The Navy's support philosophy of "carry it with you" fits nicely into the single service concept. However, it also creates unfamiliarity with other Services maintenance concerns when participating in joint operations. 21

ARMY.

Unlike the other Services the Army theater aviation maintenance support organization program for OPERATION DESERT SHIELD / DESERT STORM had to be built from the ground up. Its ultimate structure reflected the past decade of force modernization and an increased reliance on repairing symptoms at the unit level by removing and replacing components. The shift in maintenance doctrine required the CINCs planners to consider a great deal of supporting "baggage" with the employment of Army aviation assets, (e.g. extensive inventories of spare parts and components).

The Army did not yet possess the ability to have asset visibility of aviation spares and repair parts inventories located within the 13 intermediate maintenance companies in the theater. Without that capability to manage redundancy, every one of the companies that ultimately deployed carried thousands of spares and repair parts. In the larger context, the CINC and his planners ultimately had to prioritize transportation assets and this directly impacted on his flexibility to sequence forces.²²

The Army also had to struggle with the lack of standardization between aircraft arriving from CONUS and Europe. The standardization difficulties surfaced when Army Reserve and National Guard units possessing older aircraft that were no longer supported by the active force (i.e. AH-1F and UH-1V) arrived in theater without any intermediate level tools or test sets. In all the Army deployed over 1500 R/W aircraft to Saudi Arabia in support of OPERATION DESERT SHIELD / DESERT STORM.²³

Another part of the supporting "baggage" the CINC had to consider was the routine dependence the Army aviation maintenance system had developed for civilian contract maintenance augmentation during peacetime operations. The declining force structure and the evolution of technology within Army R/W

aircraft had combined to overwhelm organic maintenance capabilities. To supplement the shortfall during OPERATION DESERT SHIELD / DESERT STORM, 838 government civilians and contractor personnel were formed into the core of what became the Army's Theater Aviation Maintenance Program - Southwest Asia (TAMP-SWA).²⁴

Briefly, the TAMP-SWA began support in August 1990 with a 9 member maintenance team augmented by contractor technicians to assist in the off-loading and assembly of Army aircraft in Dammam, Saudi Arabia. Ultimately the TAMP-SWA encompassed fixed operations at three separate sites within the theater providing backup intermediate maintenance and limited depot repair/rebuild and classification capabilities. The Civilian contract personnel also supplemented the deployed intermediate maintenance companies with on-site teams, providing a full range of diagnostic expertise and equipment to accomplish limited depot level "black box" repair. The TAMP-SWA also integrated contractor operated special repair activities (SRA) into the theater support network to bridge the repair and return of highly technical armament and avionic components. Even with the expanded capability to accomplish depot repairs within theater by the end of OPERATION DESERT SHIELD the TAMP-SWA controlled over 90 percent of the worldwide inventory of critical R/W aviation supplies. TAMP-SWA was one of the principle supporters for the development and proliferation of the Desert Express rapid delivery system.²⁵ In retrospect, the TAMP-SWA verified the requirement for forward based depot repair capabilities. It also demonstrated the viability of utilizing contractor maintenance personnel within a theater of war to rapidly and effectively project significant capabilities, manpower and materiel with a short lead time.

A brief review of R/W maintenance operations within the theater reveals an

immense amount of duplication and redundancy. Each Service retained separate intermediate level capabilities for maintenance and supply. The redundancy had the benefit of demonstrating the viability of afloat and fixed maintenance operations. Additionally, each Service retained separate evacuation pipelines to depot facilities in CONUS and Europe although the Army had established a viable depot level repair operation within CENTCOM. The Army also incorporated highly skilled civilian technicians into the TAMP operation to augment deficiencies in skills and force structure. Without a doubt each of the operations represented significant capabilities but, was there a corresponding increase in readiness to justify the resources expended to maintain four separate operations? It is very likely the same increase in capability could have been achieved more effectively by utilizing some form of integrated maintenance at the theater level of support.

OPERATION PROVIDE COMFORT.

During OPERATION PROVIDE COMFORT the European Command deployed Army, Air Force, and Marine R/W aircraft to provide security and transportation support for a multinational humanitarian assistance mission. Due to host nation agreements and limited available facilities all Services established their aviation maintenance operations on the same airfield. Although the situation was ideal for sharing capabilities, the CJTF opted to retain single-service support for theater aviation maintenance. Similar to other joint operations, the duplication of capabilities may have seemed to be the most efficient as each service did tailor their force. In reality, the high OPTEMPO resulted in significant maintenance and supply difficulties that required streamlined evacuation procedures. To assure the readiness of R/W aircraft each Service

was (again) required to battle for space on any available airlift or sealift asset while maintaining the pipeline with their home station. Once again, the Army also deployed contract maintenance personnel to provide limited depot repair capabilities. At the peak of the operation there were less than 150 R/W aircraft, easily supportable by any of the Services with little augmentation. That number of aircraft also more accurately reflects the density that may be required for future "non-traditional" missions. Integrating maintenance support will multiply the CINCs ability to provide the same level of support to simultaneous operations.²⁶

SUMMARY.

The preceding examples highlight the CINCs historic reluctance to exercise his authority to designate joint/integrated maintenance as the method for supporting maintenance of R/W aircraft. Instead the CINCs have perpetuated a dependence on each Service to support their own aircraft. This tacitly acknowledges that the peculiar characteristics and capabilities of each Services aircraft are overshadowed by the support "baggage" required to maintain them. In doing so the CINCs have unintentionally limited the flexibility available within joint operations to task organize assets to achieve maximum effectiveness. Joint/integrated maintenance support only expands the concept of task organizing one step further.

The CINCs should exercise his authority to assign the service with the most aircraft the predominant responsibility for providing a base structure for theater intermediate and depot maintenance support. The base would include avionic and aircraft component repair capabilities, supply personnel and a tailored spare parts package. To augment that core, other Services providing

aircraft to the operation would only be required to contribute the minimum number of personnel, tools and parts required to supervise and assist in maintaining their peculiar aircraft. The result will expand the operational flexibility of the CINC or CJTF. It will provide an intermediate / depot level aviation maintenance capability, tailored to supporting multi-service R/W aircraft but with drastically reduced deployment mobility requirements. The benefits of utilizing joint/integrated maintenance will be discussed in the next chapter.

CHAPTER V

BENEFITS OF JOINT/INTEGRATED SUPPORT

A reality of global instability is that at any given time the U.S. military will find itself conducting or supporting multiple operations within multiple theaters. The unique capabilities of rotary wing aviation will be indispensable while conducting operations supporting humanitarian relief, disaster relief, U.N. peacemaking / peacekeeping efforts, nation building, non-combatant evacuations, security assistance or joint readiness exercises. Without a doubt, single-service support capabilities will be strained requiring prioritizing of requirements for equipment and limited personnel with high demand skills. Designating joint/integrated servicing as the method of support for any of these operations will allow the CINCs to tap into the expertise and resources of all Services.

Integrated maintenance at the operational level links the logistical principles of responsiveness, simplicity, flexibility, economy, attainability, sustainability, and survivability with the CINCs theater strategy. Joint Pub 4-0 provides a basis to aid in determining the benefits of joint service support for aviation maintenance with regards to the principles of Logistics.

RESPONSIVENESS.

Responsiveness is defined as, "...the right support in the right place at the right time. Among the principles of logistics, responsiveness is the keystone. All else becomes irrelevant if the logistic system cannot support the concept of operations of the supported commander."²⁷ The current practice of single-service support does provide the appropriate capability to ensure combat readiness of Service peculiar aircraft. Single-service support

does not however, allow the CINC's planners to maximize the employment of R/W assets based on functional capabilities rather than Service orientation to support multiple operations. By integrating access to the vast pool of experience, equipment and parts centralized management can provide the right amount and level of support in a timely manner. The benefits of joint/integrated maintenance operations would not only be increased responsiveness but also operational training experience. The CINC will have to rely on that experience to build the confidence between Services.²⁶

SIMPLICITY.

Simplicity is viewed as, "... fostering efficiency in both the planning and execution of logistics operations."²⁹ The current single service support concept can be viewed as the most efficient because it allows the Services to "take care of their own". In reality it complicates planning and sustainment efforts at the operational level. Single service maintenance support requires each Service to allocate personnel and supplies greatly straining the availability of both. The CINC and his staff must be able to look at the type and density of aircraft to be employed and clearly designate who has the responsibility for coordinating theater aviation maintenance. By designating a "predominant Service" and establishing priorities between ongoing operations the CINC will facilitate the allocation of supplies and services and simplify planning operations. Joint/integrated service support will maximize the varied capabilities of each Service to conduct R/W maintenance. The fact that at the tactical level, between the "worker bees", cross-leveling of assets already occurs is significant. The sharing of expanded intermediate and depot maintenance capabilities will also simplify evacuation and resupply operations. The benefits will be magnified as the number of regional contingencies increase.

FLEXIBILITY.

Flexibility is achieved with, "...the ability to adapt logistics structures and procedures to situations, missions, and concepts of operations. It envisions the development and use of alternative organizational structures and procedures."³⁰ The current single service approach to maintenance is by nature very rigid. Although Services possess the ability to task organize assets to support multiple operations they are generally tied to their home station for sustainment. That dependence is magnified at the operational level. Joint/integrated servicing will provide the CINC with the flexibility necessary when considering multiple employment options for R/W aircraft. With centralized control of capabilities and decentralized execution keyed to functional need rather than Service desires the CINC creates operational flexibility. The inherent premise for conducting joint-service maintenance is that the cost in people and equipment to deploy or support an intermediate/limited depot maintenance capability by each service is excessive. With a tailored, integrated maintenance operation the CINC can manage redundant capabilities while building the operational confidence necessary to adapt plans to expand or reduce mission support.

ECONOMY.

Economy is referred to as, "...providing support at the least cost in terms of resources available and necessary to accomplish the mission. However, the Commander must not allow economy to hamper military effectiveness and mission accomplishment."³¹ From the Service perspective, establishing separate theater level intermediate and depot level maintenance procedures facilitates combat readiness. Services are able to deploy tailored packages that are sustained through links with the unit's home station. However, by employing an

appropriately tailored joint/integrated maintenance operation the requirement for each Service to maintain their own separate operations would be eliminated. The most obvious savings would be in the reduction of excessive inventories of spare parts maintained within the theater. Additionally, by increasing the consolidation of the forward based repair capabilities while simultaneously channeling the evacuation and return of components the utilization of scarce transportation assets will be maximized.

ATTAINABILITY.

Attainability is, "...the ability to provide the minimum essential supplies and services required to begin combat operations, recognizing that seldom will resources be unlimited."³² The ability of the Services to support the CINC in multiple operations will decrease proportionally as the force structure decreases. In the end the CINC may not be able to employ the best aircraft for the mission because the Service support assets are "tasked out". By identifying joint/integrated service as the method for aviation maintenance support the CINC can adapt to declining resources. The Services would require greatly reduced dedicated airlift and sealift to deploy.

It is important to remember that more often than not, the limiting factor for deployment and sustainment is space available on a ship or aircraft. Though contrary to normal planning guidelines, tactical commanders must first receive a space allocation, then configure a force to support the mission. Therefore, the projected space available for load out was the deciding factor on the exact composition of maintenance support deployed.³³

The centralized management provided by joint/integrated maintenance will facilitate the adjustment of priorities by the CINC to ensure the proper skills, tools, and parts are available prior to beginning an operation. The CINC should also emphasize joint training exercises to reduce Service parochial dependence on single service support and increase confidence in joint maintenance.

SUSTAINABILITY.

Sustainability is, "...the ability to maintain logistic support throughout the operation while focusing on the CINCs long term objectives. Sustainability demands frugality and conservation. Waste of supplies or services will create shortages that could jeopardize continued operations. It requires some degree of redundancy but relies on alternatives."³⁴ Maintaining the single service approach to supporting R/W aircraft requires the dedication of personnel, supplies, equipment and transportation assets to maintain separate operations. More effective use of assets may collide with the Services perceptions of efficiency but through training, joint-service support will be equally responsive to sustainment requirements.

SURVIVABILITY.

Survivability is viewed as, "...the inherent capacity of the organization and its capabilities to prevail in the face of potential destruction."³⁵ The CINC must contend with the necessity to maintain a certain amount of duplication or redundancy in aviation maintenance capabilities. Fixed sites such as airfields and ports are vulnerable to a variety of threats and may necessitate some amount of dispersion. Joint/integrated maintenance provides the CINC with alternatives of basing the support operation afloat (aboard the T-AVBs or barges), or ashore. Training would ensure that the CINC retains the confidence that readiness would not be degraded should joint/integrated service be selected as the method of support. Survivability can also be improved through the operational security achieved by involving the minimal amount of personnel in sensitive operations.

Finally, behind the institutional bias towards single service support, compatibility and interoperability are perhaps the key concerns towards adopting or establishing a joint/integrated aviation maintenance operation. Recent efforts within the Department of Defense to improve interoperability go far towards facilitating the concept of joint maintenance. For example, acquisition and development programs now stress standards of compatibility which new weapon systems must demonstrate with existing test and diagnostic equipment, ground support equipment, common tools and common hardware. Additionally, by modifying existing platforms (such as the UH-60, SH-53, and CH-47) to accommodate specialized mission equipment the base of common items is increasing. Also contributing to compatibility is the fact that the principle helicopter manufacturers (i.e. Sikorsky, Boeing-Vertol, and Bell) utilize many of the same assembly techniques for their family of aircraft thereby easing troubleshooting and fault isolation procedures. Perhaps the biggest variable is the technical training the mechanics and technicians receive. By insuring a training program includes a sound foundation in basic maintenance, diagnostic and troubleshooting theory, cross-platform servicing will be more achievable.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

The future will find the unified CINCs deciding appropriate courses of action in response to a wide range of situations. Many of those courses of action will require the specialized capabilities of R/W aircraft. The historic examples of OPERATIONS JUST CAUSE, DESERT SHIELD, DESERT STORM, and PROVIDE COMFORT were illustrative of the viability of single Service maintenance support when assets and resources were unlimited. Today the CINC must deal with many limitations as he considers military options at the operational level of war. Reduced force structure, declining budgets, and changing doctrines demand that the CINC select the most appropriate force based on functional capabilities rather than Service doctrine. The emergence of the JTF concept reflects the CINCs willingness to task organize R/W resources across Service boundaries on a functional basis. Joint/integrated maintenance support will furnish the flexibility to employ tailored, adaptive force packages to accommodate future planning requirements at the operational level of war.

Joint/integrated maintenance will provide the CINC with centralized management to minimize unnecessary duplication of capabilities and preserve scarce resources. Also critical to implementing joint/integrated maintenance is the designation of one Service as the predominant user with the responsibility for establishing the base of theater maintenance support for R/W aircraft. By assigning responsibility the CINC will stimulate the Services to support the concept of joint maintenance with the same zeal as they approach joint tactical operations.

In conclusion, implementing joint maintenance will require a recognition that there must be changes in training as well as adjustments to Service doctrines. The real issue however is not about doctrine. It is not about changing the force structure, nor is it about a redundancy of roles and missions. The real issue is determining how the CINC will be able to institutionalize economy and efficiency while maintaining combat effectiveness within joint operations. Joint/integrated maintenance offers one solution. However, the process will probably involve cracking a few rice bowls.

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